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Canadian Patents Database

(12) Patent:

(11) CA 497983

(54) COLLAPSIBLE HIGH CHAIRS

(54) CHAISES HAUTES PLIANTES

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ABSTRACT:

CLAIMS: [Show all claims](#)

*** Note: Data on abstracts and claims is shown in the official language in which it was submitted.

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(74) [Agent](#):

(45) [Issued](#): Dec. 1 , 1953

(22) [Filed](#):

(41) [Open to Public Inspection](#):

(52) [Canadian Class \(CPC\)](#): 155/12

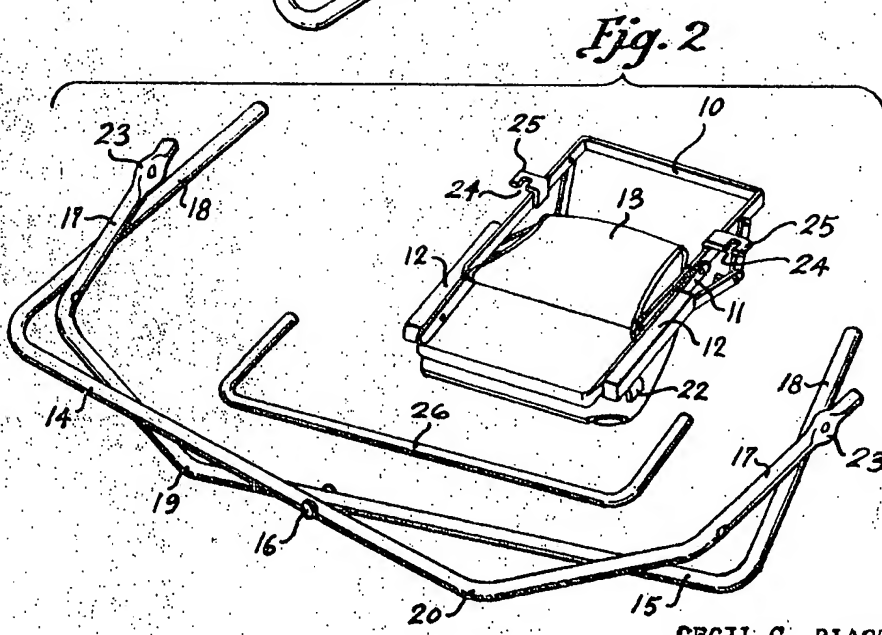
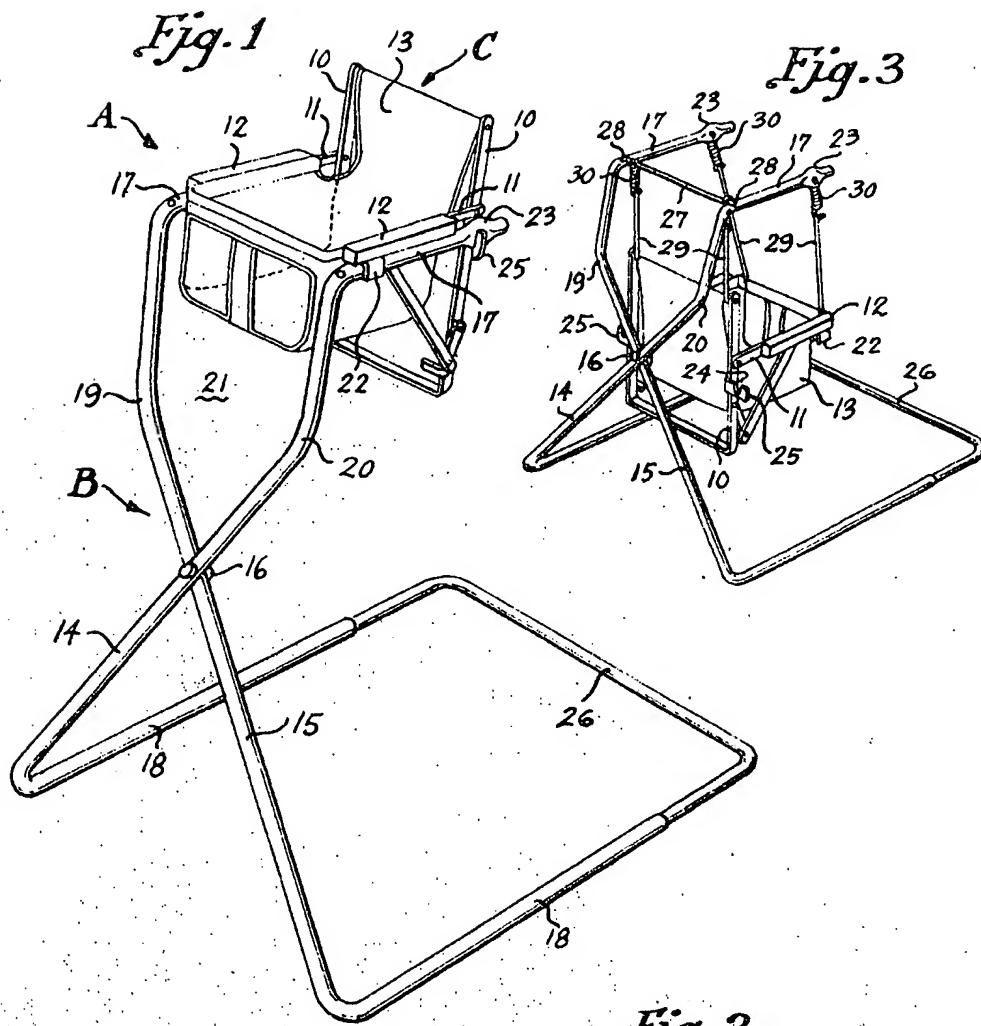
(51) [International Class \(IPC\)](#): N/A

[Patent Cooperation Treaty \(PCT\)](#): No

(30) [Application priority data](#): None

[Availability of licence](#): N/A

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This invention relates to collapsible chairs and in particular, a collapsible supporting structure therefor.

5 The field of the invention lies particularly in children's high chairs, in which field many proposals have been made, including various collapsible constructions. However, in respect of most of these latter proposals, a relatively complicated structure inevitably results and difficulties arise in respect of storage and also transport because of the general bulkiness of the article. In addition, such structures complicate manufacture.

10 The present invention largely overcomes the disadvantages of the prior art, providing a collapsible chair having parts of particularly simple character, which not only lends to a collapsed structure of little bulk, but also simplifies the manufacture. In addition, the structure is such that the chair may be used in two different ways, which constitutes a further advantage over prior proposals.

15 According to the present proposal, the invention generally comprises a supporting structure for seats which includes a pair of simple supporting elements operatively connected in swingable relation to one another and preferably pivotally connected intermediate their ends and having extensions at each end projecting at right angles thereto and to one side of the general vertical plane of the supporting elements to form a pair of

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upper supporting arms and a pair of lower supporting feet, the arms being disposed in spaced parallel relation to one another when the supporting elements are swung about their pivotal connection to extend at an incline, one to the other, in seat supporting position and forming a means for engaging and supporting the seat, the supporting structure including means for securing the elements in seat supporting position. Preferably, the arms and feet project in a common direction and are designed substantially parallel to the pivotal axis of the said elements.

The invention also comprises a combination of said collapsible supporting structure with a collapsible seat of generally known character wherein the supporting structure and the seat are designed to co-operate in a simple manner and through which the seat may be supported to form in one case a chair and in another case, a swing, the seat being of such character that it may be employed independently as such in a motor car so that it will perform a triple function and the combination acts to simplify the problem of storage and transport.

The invention will be fully understood by reference to the following detailed specification taken in conjunction with the accompanying drawings.

In the drawings, Figure 1 is a perspective view of the collapsible chair in its

set-up position, demonstrating the general character of the supporting structure and also the manner in which the seat and supporting structure are co-operatively related to form the chair.

5 Figure 2 is a composite perspective illustration of the units of the collapsible chair in collapsed position; and

10 Figure 3 is a perspective view of the combination arranged to form a child's swing.

15 Referring to the drawings, "A" indicates the complete collapsible chair in set-up position, which includes the collapsible supporting structure "B" and a collapsible seat unit "C". The seat unit "C" is of a generally known kind which is employed for a child's seat in an automobile, comprised by a collapsible frame-work including an upright frame 10, a horizontal frame-work 11 including, arms 12 and a canvas body 13 forming the seat and back, which is connected to the vertical and horizontal frame-work and forms a seat when said frame-works are swung to the set-up position. Such a structure also usually employs hook-like elements which may be
20 connected to the vertical frame adjacent its top so that it may be hooked over the back of an automobile seat to provide a seat in which the child may safely sit while riding in an automobile.

25 The supporting frame-work "B" is
30 comprised by a pair of supporting elements 14 and

15 which are pivotally connected intermediate
their ends as at 16 and at their ends, are
provided with the extensions 17 and 18 project-
ing substantially at right angles to the
elements and which preferably also project
in a common direction substantially parallel
to the pivotal axis of the elements 14 and 15.
The upper extensions 17 constitute a pair of
arms and the lower extensions 18, a pair of feet,
the former functioning to engage and support the
seat "C" and the latter forming means for sup-
porting the elements 14 and 15 in a substantially
vertical position when said elements are swung
about their pivotal connection to extend at an
incline to one another in seat supporting posi-
tion. The feet 18 are longer than the arms 17
in order to provide for the firm support of the
structure.

Preferably the upper ends of the
supporting elements 14 and 15 are offset from
their normal longitudinal axis as at 19 and 20
so that they may extend in substantially parallel
spaced apart relation to one another when the
supporting structure is in seat supporting posi-
tion and which makes it possible to locate the
point of pivotal connection 16 lower than would
otherwise be possible, thus to permit a space
21 between the supporting elements 14 and 15 of
greater depth than would otherwise be the case
so that the elements are kept clear of the legs
of the child as they depend below the seat.

A means is provided for retaining the supporting elements substantially rigidly in seat supporting position. This may be achieved by means of the depending lugs 22 connected with the arms 12 of the seat unit "C". In this instance, the arms 12 are employed between the upright frame 10 and horizontal frame-work 11 of the seat and are designed to project laterally from the latter in normal manner so that they will directly overlies the spaced apart parallel supporting arms 17 of the seat supporting structure and constitute the means from which the seat is supported on the arms 17 as they lie in bearing engagement on the latter. In a preferred form of structure, the arms 17 are somewhat flattened as at 23 adjacent their free ends so that they may be received in a slot 24 formed in the brackets 25, which is secured to the upright frame 10 of the seat (see Figures 1 and 2). In fact, both the lugs 22 and the lugs 25 form a means to retain the supporting structure in substantially rigid seat supporting position, while the lugs 25 also perform a function of preventing the seat from sliding along or relatively to the supporting arms 17. In this instance, in the preferred form of structure, a supporting structure comprised by the elements 14 and 15 and their extensions, is formed from metal tubing and the flattened portion which enters the space between the lugs 25 of the upright frame 10 of the seat, holds these lugs in that location

as the slot is not wide enough to straddle the diameter of the adjacent tubular parts of the arms. Alternatively, however, it is apparent that a slot in the tube or other arm used in the area where the tube is flattened as shown in Figure 1, would perform a similar function.

Another means for retaining the seat supporting structure in substantially rigid seat supporting position may be employed which also will serve to perform an additional function. This consists of the substantially U-shaped extension element 26 which, in the preferred form of structure, is formed from tubing of smaller diameter than that of supporting structure "B" and which, as shown in Figure 1, is designed to connect with the feet 18 thereof. In this instance, the free ends of the arms of the U telescope into the free ends of the feet 18 in effect to increase the length of the feet 18 and to form a more substantial base for the seat supporting structure "B". In fact, where the seat supporting structure is used in the alternative manner, i.e., to provide with the seat, a swing, it is desirable that the extension 26 be employed.

In Figure 3, I illustrate the manner in which the seat supporting structure and the seat may be confined to form a swing. In this instance, I preferably employ a retaining rod 27 as a means for retaining the supporting

structure in substantially rigid seat supporting position. This rod is bent at each end as at 28 to provide small lugs projecting substantially at right angles to the bar and which are designed to enter into orifices in the arms 17 positioned adjacent to the point of bending of the arm from the supporting element with which it is connected. Therefore, by providing the seat with the flexible suspension elements 29 which preferably enclose coil springs 30, the seat can be suspended from the arms 17 to form a swing. In this instance, the free hooked end of the spring for the two rear suspension elements, may be hooked over the bar 27 while that of the two front suspension elements may readily be hooked through an orifice provided in each of the flattened portions of the arms 17. As a result, therefore, the high chair provided by the combination as illustrated in Figure 1 can very readily be transferred into a swing structure as shown in Figure 3 in a very simple manner.

The overall utility of the invention is readily appreciated in the foregoing. The supporting structure is most simple in character and readily dismantled and foldable as shown in Figure 2. It may be easily erected into either of the forms illustrated in Figures 1 and 3 whereas the seat in itself may be used in its more normal manner as a seat for a child in an automobile when the child is taken out in the

latter and in this instance, the supporting frame-
work "B" is easily accommodated either in the trunk
of the automobile or the back of the automobile and
is easily set up as a chair or swing when the des-
tination is reached.

While the preferred form of construc-
tion has been described and illustrated in the
foregoing specification and accompanying drawings,
it will be appreciated that modifications may be made
in this invention embodying a pair of simple swing-
ably connected seat supporting elements without
departing from the spirit of the invention and it
is to be understood, therefore, that the disclosure
is not to be interpreted in a limiting sense.

Therefore it is intended that only
those limitations should be made consistent with the
scope of the appended claims.

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The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

5 1. A collapsible chair structure comprising in combination: a seat, a pair of supporting elements operatively connected in swingable relation to one another and having extensions at each end in the form of upper
10 supporting arms and lower supporting feet, and disposed in spaced parallel relation to one another when the supporting elements are swung to a substantially upright seat supporting position, said seat having means for engaging said arms
15 and locking them in upright position to support said seat, said arms, when locked by said seat, forming a means of supporting said seat.

20 2. A collapsible supporting structure for seats comprising: a pair of supporting elements pivotally connected together intermediate their ends and having extensions at each end projecting to one side of the general vertical plane of said supporting elements to form a pair of upper supporting
25 arms and a pair of lower supporting feet, the arms being disposed substantially parallel to the pivotal axis of said elements and, in spaced parallel relation to one another, when the supporting elements are swung about their pivotal axis to extend at an incline to
30 one another in seat supporting position, said arms

forming a means for engaging and suspending a seat and means for securing said elements in substantially rigid seat supporting position when said seat is mounted thereon.

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3. A collapsible supporting structure for seats comprising: a pair of supporting elements pivotally connected intermediate their ends and having extensions at each end projecting, in a common direction at substantially right angles thereto and substantially parallel to the pivotal axis of said elements to form a pair of upper supporting arms and a pair of lower supporting feet, each of said pairs being disposed in spaced parallel relation to the other when said supporting elements are swung about said pivotal connection to extend at an incline to the other in seat supporting position, and means for securing said elements in seat supporting position when said seat is mounted, the latter being suspended by said arms.

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4. A collapsible supporting structure for seats as claimed in Claim 1 and Claim 2 in which the supporting elements are formed from metal tubing and in which the feet terminate in free ends exposing the bore of said tubing, said structure including a U-shaped extension of cylindrical cross-section of a diameter less than the tube of the supporting elements, the arms of the U being capable of telescoping into the bore of the free ends of said feet to form with the feet, an extended frame-work continuous from one

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foot to the other, as a base for the supporting elements.

5 5. A collapsible chair comprising in
combination, a seat unit having arms projecting laterally
from the frame thereof and a connectable supporting
frame-work including a pair of symmetrical supporting
elements pivotally connected intermediate their ends,
having extensions at each end projecting at sub-
10 stantially right angles thereto in the form of a
pair of upper supporting arms and a pair of lower
supporting feet, said supporting arms projecting
substantially parallel to the pivotal axis of said
elements and being disposed in spaced apart parallel
15 relation to one another when said supporting elements
are swung on their pivots to extend at an incline to
one another in a seat supporting position, said feet
projecting from said elements on the same side of a
general vertical plane passing through said connected
20 elements, as said supporting arms, means in connection
with said seat unit for engaging said spaced apart
upper supporting arms of the frame-work to mount the
seat unit thereon and means for retaining said
supporting frame-work in substantially rigid supporting
25 position.

30 6. A collapsible supporting structure
for seats as claimed in Claim 1 and Claim 2 in which
the supporting elements are formed from metal tubing
and in which the feet terminate in free ends exposing

the bore of said tubing, said structure including
a U-shaped extension of cylindrical cross-section of
a diameter less than the tube of the supporting
elements, the arms of the U being capable of teles-
5 coping into the bore of the free ends of said feet
to form with the feet, an extended frame-work
continuous from one foot to the other, as a base
for the supporting elements and in which the means
for engaging said spaced apart upper supporting arms
10 of the frame-work comprise the arms of said seat
unit, the supporting arms of the frame-work being
designed to extend on each side of the frame-work
of said seat unit and to receive the arms of the
latter in bearing engagement therewith.

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